Amendments to the Drawings:

Please replace Figures 1-4 as originally filed with the REPLACEMENT SHEETS submitted concurrently herewith, as Exhibit A which includes new Figure 5. Figures 1-4 have been amended with computer generated lead lines and reference numerals. Figure 2 has additionally been amended to show a spring attached to crank 91, cross-section 5-5, and a spring attached to the drill linkage mechanism. Figure 3 has been further amended to identify reference numeral 64. New Figure 5 illustrates a work pattern.

REMARKS

This is in response to the Office Action dated November 17, 2005.

I. Summary of Office Action

In the Office Action, the drawings were objected to based on a contention Figure 3 fails to make reference to lever 64 (as is shown in Figures 2 and 4). Moreover, the drawings were objected to under 37 CFR 1.83(a) based on a contention that the "work pattern" recited in Claim 3, "the clamp pivot is biased to an up position" recited in Claim 6, and "biased with a spring" recited in Claim 7 must be shown or the features cancelled from the claims.

The disclosures were also objected to based on a contention that "clamp pivot 71" in paragraph 32 should be changed to read "claim pivot 74" also, the reference to "Figure 3" in paragraph 39 should be changed to refer to "Figure 4." Lastly, the word "as" in paragraph 40 should be replaced with the word "at." Claims 3-8, 14 and 15 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claims 1, 3, 4, 6-8, 14 and 15 were rejected under 35 U.S.C. §102(b) as being anticipated by Stelz (U.S. Patent No. 2, 420,759). Claims 1, 3-5 and 14 were rejected under 35 U.S.C. §102(b) as being anticipated by Onsrud (U.S. Patent No. 4,537,234). Claims 1, 3 and 9 were rejected under 35 U.S.C. §102(b) as being anticipated by May (U.S. Patent No. 3,041,896). Claim 10 was rejected under 35 U.S.C. §103(a) as being unpatentable over Stelz in view of Peddinghaus (U.S. Patent No. 4,664,566). Claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over Stelz in view of Peddinghous.

II. Applicant's Response

A. Drawings

In the Office Action, the drawings were rejected to based on a contention that Figure 3 fails to make reference to lever 64. By this amendment, Applicant has amended Figure 3 to identify lever 64. Accordingly, such amendment to Figure 3 overcomes the Examiner's objection.

Also, in the Office Action, the drawings were objected to under 37 CFR 1.83(a) based on a contention that the "work pattern" recited in Claim 3, the "clamp pivot is biased to an up position" recited in Claim 6, and "biased with a spring" recited in Claim 7 must be shown or the features cancelled from the claims. By this amendment, Applicant has added new Figure 5 which shows the work pattern to show the "work pattern" limitation of Claim 3. Also, as shown in Figure 2, a spring biasing the drill linkage system has been added to show the "biased with a spring" limitation of Claim 7. Applicant respectfully disagrees that the drawings do not show the clamp pivot biased to an up position. In support thereof, Applicant respectfully directs the Examiner's attention to paragraph 34 which discusses the use of the boring machine. Such paragraph recites that the clamp pivot 74 starts to traverse in the down direction and overcome the up position bias of the clamp pivot 74. Applicant respectfully submits that such up position is shown in Figure 2. Accordingly, the Examiner's objection to the drawings with respect to Claim 6 should be withdrawn.

B. Specification

By this amendment, Applicant has changed "clamp pivot 71" to "clamp pivot 74" in paragraph 32. Also, Applicant has amended paragraph 39 by changing "Figure 3" to "Figure 4." Applicant has changed the word "as" in paragraph 40 to "at." Hence, the Examiner's objections to the disclosure have been overcome.

Lastly, paragraph 25 has been amended to refer to the work pattern.

C. Claim Rejections- 35 U.S.C. §112

As will be discussed further below, the limitations of Claim 1 has been incorporated into dependent Claim 2. Also, the claims which were originally dependent upon Claim 1 has been amended to depend upon Claim 2. Additionally, "modifier" has been amended to "drill" in Claims 2-5 and 7-8. Since Claim 2 recites a drill and a drill pivot and a clamp pivot and a pedal portion, the Examiner's rejection of Claims 3, 4, 6 and 14 has been overcome based on a contention that these claims now depend on Claim 2 which does provides antecedent basis for such terms.

By this amendment, Applicant has amended Claim 7 by changing the term "upwardly" to "downwardly." Accordingly, the Examiner's rejection of Claim 7 is overcome. Moreover, Applicant has amended Claim 8 to recite that an amount of downward

bias on the modifier pivot is greater than an amount of upward bias on the clamp pivot. Applicant respectfully submits that such amendment to Claim 8 overcomes the Examiner's rejection thereto.

D. Claims 1 and 16

In the Office Action, the Examiner rejected Claim 1 under 35 U.S.C. §102(b) as being anticipated by Stelz, Onsrud, and May. Applicant has amended Claim 1 by deleting the term "line" and replacing the phrase "and proportionately adjusted with respect to" with "increased relative to an increasing." In response to the rejection of Claim 1, Applicant has amended Claim 1 to focus on the mechanical aspect of the invention recited in Claim 1. Applicant has amended the lever of Claim 1 to be mechanically attached to the drill linkage system and the clamp linkage system. Also, the lever is mechanically operative to vertically traverse the drill and the clamp. The cited prior art, as understood, does not disclose a lever which is mechanically operative to vertically traverse the drill and clamp. In support thereof, Applicant respectfully directs the Examiner's attention to Figure 1 of Stelz and Column 3, Lines 14-44. Such referenced section discusses that the device of Stelz is air operated. The attachment between the lever (58, 56, 54 in Stelz) is fluidicly (i.e., air) operative to vertically traverse the drill and fluidicly operative to vertically traverse the clamp. In contrast, the invention recited in Claim 1 recites that the lever is mechanically operative to vertically traverse the drill and clamp. Hence, the disclosure of Stelz does not disclose all of the limitations recited in amended Claim 1.

Moreover, there is no motivation to modify the device of Stelz such that the lever mechanically traverses the clamp and drill. The reason is that the device of Stelz operates on the basis of air pressure and not mechanical force transmissions. In support thereof, the first sentence of Stelz states that "this invention relates to an air-controlled machine." MPEP §2143.01 (VI) states that "if the proposed modification or combination of the prior art would change the principal of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." In Stelz, the principal of operating the device of Stelz is via air operation. If the device of Stelz was modified such that the operation was mechanical, then the proposed modification would change the principal of operating the device of Stelz from air operation to mechanical

operation. Hence, there is no motivation to modify the device of Stelz so as to be mechanically operated.

In Onsrud, the lever is not mechanically operative to vertically traverse the clamp. In support thereof, Applicant respectfully directs the Examiner's attention to Column 4, Lines 32-35 which recite that the clamp "can be adjusted vertically to accommodate varying thicknesses of material by sliding it up or down after loosening clamp screw 17." Accordingly, the lever does not operate in any way to vertically traverse the clamp, as understood. The vertical traversal of the clamp is understood to be solely performed by the screw 17. Hence, the disclosure of Stelz does not disclose all of the limitations recited in amended Claim 1.

There is also no motivation to modify the device of Onsrud such that the lever mechanically operates both the drill and the clamp. MPEP §2143.01 (I) states that the prior art must suggest the desirability of the claimed invention. Applicant has been unable to find any suggestion of attaching the lever to both the drill and the clamp. Accordingly, there is no motivation to modify the device of Onsrud such that the lever is attached to both the drill and the clamp.

In May, Applicant respectfully submits that the lever which is attached to the drill linkage system is not mechanically attached to the clamp linkage system. In support thereof, Applicant respectfully directs the Examiner's attention to Column 3, Lines 7-25. As discussed in the referenced section, the levers (i.e., hydraulic mechanisms 80 and 22) are not mechanically operative to vertically traverse the drilling clamp. Rather, the hydraulic mechanisms 80 and 22 operate fluidicly. Hence, the disclosure of May does not disclose all of the limitations recited in amended Claim 1.

There is also no motivation to modify device made such that the levers (hydraulic mechanisms 80 and 22) mechanically operate the drill and clamp for the same reasons discussed above in relation to Stelz. (see last paragraph on page 11).

For the foregoing reasons, Applicant respectfully submits that the cited art, does not disclose, suggest or make obvious the invention recited in Claim 1.

Applicant also respectfully submits that dependent Claim 16 is in condition for allowance for containing additional patentable subject matter and for being dependent upon

allowable base Claim 1. Claim 16 further recites that the clamp downward force is proportionately increased as the drill upward force is increased such that the clamp downward force is always greater than the drill upward force. Such situation is not the case in the cited prior art.

For example, in Stelz, fluid (i.e., air) is introduced through airline pipe 58. Such air pressure controls cylinder 17 and 37 to respectively and independently operate or vertically traverse the drill and clamp. The specification of Stelz recites that the amount of air flowing to the cylinder 17 is controlled via hand operated valve 52, and the amount of air directed toward cylinder 37 is controlled via hand operated valve 59. In this regard, as the drill is upwardly traversed and contacts the work piece, the clamp downward force is not proportionately increased as the drill upward force is increased. Rather, to increase the clamp downward force, hand operated valve 59 is opened to allow air to travel through cylinder 37. To raise the drill, hand operated valve 52 is opened. If the drill applies an excessive amount of drill upward force on the work piece so as to lift the work piece off of the bed, hand operated valve 59 may be further opened to increase air flow to cylinder 37 and increase the clamp downward force onto the work piece. As such, the clamp downward force is not proportionately increased as the drill upward force is increased. Also, when the work piece is raised off of the bed, the drill upward force is greater than the clamp downward force.

A free body diagram of the work piece also illustrates that the clamp downward force is not proportionately increased as the drill upward force is increased. In particular, when the work piece is placed on the bed and clamped down by the clamp onto the work piece, the clamp may apply a clamp downward force on the work piece. The work piece does not move downward based on a contention that the bed applies an equal and opposing upward force to the clamp downward force. When the drill is vertically traversed and begins to work on the work piece, the drill applies a drill upward force to the work piece. As the drill works the work piece, the drill upward force may vary based on the operation performed on the work piece. However, the clamp downward force remains the same based on a view that the sum of the upward forces (e.g., bed upward force and drill upward force) must equal the sum of

the downward forces (e.g., clamp downward force[1]). In particular, the sum of the upward force of the bed on the workpiece and the drill upward force is equal to the clamp downward force. As the drill applies a drill upward force on the workpiece, the bed applies less of an upward force on the workpiece such that the work piece, bed, drill and clamp are in static relationship with each other. Hence, the disclosure of Stelz does not disclose the limitation that the clamp downward force is proportionately increased as the drill upward force is increased and thus Stelz does not disclose all of the limitations of dependent claim 16.

In Onsrud, the clamp appears to be stationary or fixed with respect to the bed of the machine. The clamp applies a downward force to the work piece and the bed to fix the work piece to the bed. When the pedal 42 is depressed, the drill is raised until the drill contacts the work piece and works the work piece. As discussed above, the clamp downward force is not proportionately increased as the drill upward force is increased. Moreover, if the drill is raised too fast, then a drill upward force may push the work piece off of the bed by bending support 16. In this instance, the drill upward force is greater than the clamp downward force. Hence, the disclosure of Onsrud does not disclose a clamp downward force that is proportionately increased as the drill upward force is increased such that the clamp downward force is greater than the drill upward force.

In May, as discussed above, the drill upward force and the clamp downward force are independently operated via hydraulic mechanisms 80 and 22, respectively. Hence, the clamp downward force is not proportionately increased as the drill upward force is increased, as discussed in relation to Stelz above. Also, the clamp downward force may not be greater than the drill upward force. For example, if the drill upward force were to apply a force which is greater than the clamp downward force thereby lifting up the work piece from the bed, the clamp downward force is greater than the drill upward force, as discussed in relation to Onsrud above.

For the foregoing reasons, Claim 16 is believed to be in condition for allowance.

[1] The downward force due to weight may be assumed as negligible. If the weight of the work piece is substantial, Applicant respectfully submits that since such weight is a constant, the downward force due to the work piece's weight does not impact Applicant's arguments presented herein.

E. New Claims 17-20

New Claim 17 is substantially similar to Claim 1 except that new Claim 17 recites that the lever is rotateably attached to the drill linkage system and the clamp linkage system for self adjusting a clamp downward force with respect to a drill upward force. The cited prior art, namely, Stelz, Onsrud and May do not disclose such limitation.

In Stelz, the lever is an air fitting that is fixedly attached to the drill linkage system and the clamp linkage system. In Onsrud, the clamp is fixed to the bed and not rotateably attached to the lever. In May, the lever is a hydraulic mechanism and is not rotateably attached to the drill and clamp linkage mechanisms. Accordingly, Stelz, Onsrud and May do not disclose, suggest or make obvious the invention recited in Claim 17, and thus, Claim 17 is believed to be in condition for allowance.

The dependent claims of Claim 17, namely, Claims 18-20 are believed to be in condition for allowance for being dependent upon allowable base Claim 17 and for containing additional patentable subject matter. For example, new Claim 18 recites that the clamp downward force is increased as the drill upward force is increased. Applicant respectfully submits that the cited prior art does not disclose such limitation.

The disclosures of Stelz, Onsrud and May all disclose an updrill. The updrill positions a drill below a bed and a clamp above the bed to clamp a work piece to the bed as the drill is vertically traversed upward to work on the work piece. In the cited prior art, namely, Stelz, Onsrud and May the vertical traversal of the drill and the downward traversal of the clamp are independently operated from each other. As such, as the drill upward force is increased, the clamp downward force is not increased, as discussed in relation to Claim 16. For example, if the drill was vertically traversed such that a drill upward force was equal to about one pound and the clamp applies a clamp downward force of about three pounds, the drill upward force would not initially vary based on a contention that drill upward force reduces the upward force of the bed on the work piece and the drill does not increase its downward force as the drill upward force varies.

Hence, Applicant respectfully submits that the cited prior art does not disclose, suggest or make obvious the subject matter recited in new Claim 18. Also, Applicant

respectfully submits that Claim 18 is in condition for allowance for containing additional patentable subject matter.

Dependent Claim 20 is also in condition for allowance for containing additional patentable subject matter. Claim 20 further recites that the clamp downward force is greater than the drill upward force. As discussed above, the clamp downward force always remains constant despite variations of the drill upward force. As such, it is conceivable that if the drill were vertically traversed upward fast enough, the drill upward force may exceed the clamp downward force. At that moment, as understood, the work piece would lift off the bed. Typically the work piece may lift off of the bed when the drill upward force is greater than the clamp downward force and the support arm of the clamp is bendable or flexible or not sufficiently rigid, as shown in Stelz and Onsrud. To alleviate these types of deficiencies, inventors may increase the rigidity of the clamp support arm as shown in Figure 1 of May. The clamp support arm of May shown in Figure 1 is much heftier than the clamp support arm of Stelz and Onsrud. Nonetheless, the clamp support arm of May may still bend and flex such that the drill upward force would exceed the clamp downward force and lift the work piece off of the bed. Hence, Applicant respectfully submits that Stelz, Onsrud and May do not disclose, suggest or make obvious the invention recited in Claim 20, and thus Claim 20 is believed to be in condition for allowance.

For the foregoing reasons, Applicant respectfully submits that Claims 17-20 are in condition for allowance.

F. New Claims 21-22

Applicant respectfully requests entry of new Claims 21 and 22 directed to a method for boring holes. New Claim 21 recites a unique and novel step of "upon contact of the drill to the work piece, transferring a force exerted on the drill by the work piece to the clamp through the lever such that the clamp downward force is proportionately increased as the drill upward force is increased." Applicant respectfully submits that the force exerted on the drill by the work piece is not transferred to the clamp <u>through the lever</u>. Rather, as discussed above, the clamp downward force is adjusted independently of the drill upward force. Hence, the cited prior art does not disclose, suggest or make obvious the invention recited in Claim 21, and thus, Claim 21 is believed to be in condition for allowance. Dependent Claim

22 is also believed to be in condition for allowance for containing additional patentable subject matter and for being dependent upon an allowable base claim.

G. Allowable Subject Matter

In the Office Action, Claim 2 was objected to as being dependent upon a rejected base claim, but the Examiner indicated that it would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. By this amendment, Applicant has deleted the term "line" and replaced the term "modifier" with "drill." Also, Applicant has amended Claim 2 to incorporate all of the limitations of original Claim 1. Accordingly, Applicant respectfully submits that Claim 2 is now in condition for allowance. Moreover, Claims 3-15 have been amended as appropriate to further depend on Claim 2. Accordingly, Applicant respectfully submits that the dependent claims of Claim 2, namely, Claims 3-15 are also in condition for allowance for being dependent upon an allowable base claim. Moreover, dependent Claims 3-15 are believed to be in condition for allowance for containing additional patentable subject matter.

III. Conclusion

For the foregoing reasons, Applicant respectfully submits that Claims 1-22 are in condition for allowance. An early notice of allowance is therefore respectfully requested. Should the Examiner have any suggestions or comments for expediting allowance of the above-identified patent application, the Examiner is invited to contact the Applicant's representative at the telephone number listed below.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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